

USSR / General and Specialized Zoology. Insects.

P

Abs Jour: Ref Zhur-Biol., No 2, 1958, 6755.

Author : Areshnikov, B. V.

Inst : Not given.

Title : The Lupine Snout Beetle and Methods of Controlling It.

Orig Pub: Kolgospnik Ukraini, 1956, No 12, 17-18.

Abstract: This snout beetle injures leguminous plants, preferring the narrow-leaved and changing lupine plants. The following methods of control are recommended: deep late-autumn plowing, trap-ditches treated with DDT, and dusting and spraying with DDT of the beetle's wintering places and of the sown cropland. -- V. G. Gubina.

Card 1/1

ARESHNIKOV, B.A., kand.biolog.nauk

Make a more extensive application of aerial spraying in  
controlling the shield bug *Eurygaster integriceps*. ~~hashch.~~  
rast. ot vred. 1 bol. 7 no.2:8-9 F '62. (MIRA 15:12)  
(Ukraine—Eurygasters)  
(Ukraine—Aeronautics in agriculture)

~~ARSHNIKOVA, L.A., kandidat meditsinskikh nauk~~  
ARSHNIKOVA, L.A., kandidat meditsinskikh nauk

Regional cerebral hypertension. Vrach.delo no.9:931-933 S '57.  
(MLRA 10:9)

1. Kafedra nervnykh bolezney (zav. - akad. AMN SSSR, prof. B.N.  
Man'kovskiy) Kiyevskogo meditsinskogo instituta  
(HYPERTENSION) (BRAIN--DISEASES)

ARESHNIKOVA, L.A., kand.med.nauk

Some results of reserpine treatment of the cerebral form of hypertension. Vrach.delo no.6:597-599 Je '59. (MIRA 12:12)

1. Kafedra nervnykh bolezney (zav. - deystvitel'nyy chlen AMN SSSR, prof. B.N. Man'kovskiy) Kiyevskogo meditsinskogo instituta.  
(RESPERINE) (HYPERTENSION)

ARESHNIKOVA, L.A., kand.med.nauk

Tabetic crises. Sov.med. 23 no.11:116-119 N '59.

(MIRA 13:3)

1. Iz kafedry nervnykh bolezney (zaveduyushchiy - deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR B.N. Man'kovskiy) Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta imeni A.A. Bogomol'tsa (direktor - dotsent I.I. Alekseyenko).  
(TABES DORSALIS complications)  
(ABDOMEN ACUTE etiology)

ARESHNIKOVA, L.A.

Problem of the clinical aspects, pathogenesis and etiology of regional cerebral hypo- and hypertension. Zhur. nerv. i psikh. 60 no. 12:1588-1591 '60.  
(MIRA 14:4)

1. Kafedra nervnykh bolezney (zav. - prof. B.N. Man'kovskiy) Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta imeni A.A. Bogomol'tsa.  
(HYPERTENSION) (HYPOTENSION) (BRAIN—BLOOD SUPPLY)

ARESHNIKOVA, L.A., kand.med.nauk

Importance of regional cerebral hypo- and hypertension in the  
pathogenesis of vascular diseases of the brain. Vop. klin. nevr.  
i psikh. no.2:62-72 '58. (MIRA 14:10)  
(BRAIN-DISEASES) (HYPERTENSION) (HYPOTENSION)

ARESHNIKOVA, L.A.

Clinical aspects of encephalitis with a lesion of the reticular formation of the brain stem. Zhur. nevr. i. psikh. 65 no.3: 358-360 '65. (MIRA 18:4)

1. Kafedra nervnykh bolezney (zaveduyushchiy - prof. N.B. Man'kovskiy) ordena Trudovogo Krasnogo Znameni meditsinskogo instituta im. Bogomol'tsa (direktor - prof. V.O. Bratus'), Kiyev.



ARESHNIKOVA, L.A.; OVSEPYAN, A.G.

Effect of reserpine on the capillary blood circulation. Vrach.  
delo no.8:123-124 Ag'63. (MIRA 16:9)

1. Kafedra nervnykh bolezney (zav. - prof. N.B.Man'kovskiy)  
Kiyevskogo meditsinskogo instituta.  
(RESERPINE) (CAPILLARIES)

ARESHNIKOVA, L.A.; BELONOG, R.P.

Bioelectrical activity of the brain in regional cerebral hypo- and hypertension; clinical encephalographic characteristics. Zhur. nevr. i psikh. 65 no.4:531-534 '65.

(MIRA 18:5)

1. Kafedra nervnykh bolezney (zaveduyushchiy - prof. N.B. Man'kovskiy) Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta im. Bogomol'tsa i otdeleniye vozrastnykh izmeneniy nervnoy sistemy Instituta gerontologii i eksperimental'noy patologii (direktor - prof. D.F. Chebotarev) AMN SSSR.

ACCESSION NR: AT5009030

UR/3012/64/000/002/0057/0072

AUTHOR: Areshyan, G. L. ; Marandzhyan, G. B.

TITLE: The probability and entropy reliability criteria

**SOURCE:** Yerevan. Yuchislitel'nyy tsentr. Trudy, no. 2, 1964, Matematicheskkiye voprosy kibernetiki i vychislitel'noy tekhniki; lineynoye programmirovaniya i teoriya avtomaticheskikh matematicheskikh preobrazovaniy i t.d.; teoreticheskiy i prikladnyy aspekt. [Mathematical problems of cybernetics and theory of linear programming, theory of automatic mathematical transformations and similar problems; theoretical and applied aspects.]

**TOPIC TAGS:** discrete memoryless automaton, probabilistic automaton, deterministic

**Abstract.** In this paper, we define a countable class preoperator in discrete mathematics.

examines how they grow how to transfer the "proliferation" of international into a national level.

Çarş

L 41822-65

ACCESSION NR: AT5009030

(degeneration of the probabilistic automation), and develop probabilistic and entropy reliability criteria. "The authors thank Docent G.A. Ambartsunyan for his help and advice." Orig. art. has: 16 formulas.

ASSOCIATION: Vychislitel'nyy tsentr Yerevan, (Computer Center)

SUBMITTED: 16Jan64

ENCL: 00

SUB CODE: DP

NO REF SOV: 001

OTHER: 001

Card <sup>2nd</sup> 2/2



L 41823-65

ACCESSION NR: AT5009031

Trudy, no. 2, 1964, pp 67-72). In addition, the same results may form the foundation for the calculation of load intensity in real elements of discrete technology incorporated extended systems. (The author's name is Decent G.A. Ananiasyan for a detailed advice. Orig. art. has: 21 formulas and 6 figures.

ASSOCIATION: Vychislitel'nyy tsentr Yerevan, (Computer Center)

SUBMITTED: 16Jan64

ENCL: 00

SUB CODE: DP, IE

NO REF SOV: 004

OTHER: 000

Card 2/2

L 11033-66 EWT(d)/EWT(1)/T/EWA(h) IJP(c) TG

ACC NR: AR6000418

SOURCE CODE: UR/0271/65/000/009/B005/B005

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika, Abs. 9B38

AUTHOR: Areshyan, G. L.; Marandzhyan, G. B.

TITLE: Probabilistic and entropy criteria of reliability

CITED SOURCE: Tr. Vychisl. tsentra AN ArmSSR i Yerevansk. un-ta, vyp. 2, 1964, 67-72

TOPIC TAGS: automaton, reliability criterion, automaton reliability

TRANSLATION: Definitions of failure (irreversible structural change) and malfunction (reversible change) are suggested for a deterministic nonstorage automaton. It is shown that the deterministic automaton operating with malfunctions can be reduced to a probabilistic automaton. A method is suggested for experimental determination of the values of  $a_{ij}$  - elements of the probability matrix of automaton  $y_i$  ( $i = 1, 2, \dots, m$ ) response to an alphabet of input signals  $x_j$  ( $j = 1, 2, \dots, n$ ), i.e.,  $a_{ij}$  are the conditional probabilities  $p(y_i/x_j)$ . This function is offered as a probabilistic criterion of reliability:

$$\psi = \sum_{i=1}^n p_i a_{ij}$$

where  $p_i$  ( $i = 1, 2, \dots, n$ ) is the distribution of probabilities over the input alphabet of the probabilistic automaton;  $a_{ij}$  are those elements of the matrix

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UDC: 621.142.019.3.001

L 11033-66

ACC NR: AR6000418

of probabilities of malfunction-automaton response which occupy the positions of ones in the deterministic no-malfunction automaton (naturally, for this automaton, all  $a_{ij}$  can take on only 1 or 0 values).

SUB CODE: 13, 09

60  
Card 2/2



ARESIN, Norbert, Prof., Dr., (Erfurt)

Operative therapy of cancer of the cervix uteri. Cesk. gyn. 21  
no.3:174 Apr 56.

(CERVIX, UTERINE, neoplasms,  
surg. (Cz))

ARESIN, N., prof.

Examples of prophylactic and metaphylactic work in the Leipzig  
Obstetrical and Gynecological Clinic. Cesk. gyn. 27 [41] no.6/7:  
430-432 Ag '62.

1. Gyn.-por. klinika university v Lipsku, reditel prof. dr. med. habil.  
N. Aresin, zaslouzily lekar lidu, nositel stribrneho Radu za zasluhy  
o vlast.

(GYNECOLOGY)

(PREVENTIVE MEDICINE)

1.2300

1573

33519  
S/135/62/000/002/003/010  
A006/A101

AUTHORS: Krutikov, A.N., Candidate of Technical Sciences, Arest, T.V.,  
Engineer, Kristal, N.M., Engineer

TITLE: On the problem of welding and corrosion resistance of steel-copper,  
steel-bronze and steel-brass bimetals

PERIODICAL: Svarochnoye proizvodstvo, no. 2, 1962, 15 - 17

TEXT: The authors investigated the possibility of using steel, clad with copper and its alloys, in chemical machinebuilding. Since the use of bimetals presents some advantages over coating the steel with copper and its alloys, the weldability of steel-copper, steel-bronze and steel-brass bimetals was investigated and a welding technology was developed. Copper, brass and bronze can be gas-and arc-welded. In the latter case metal or carbon electrodes are used; for argon-arc welding non-consumable electrodes should be employed and automatic welding should be performed with a submerged arc. A carbon-arc is widely used for welding brass. Welding copper and bronze with a metal electrode is performed on d-c of reverse polarity, and brass on d-c of direct polarity; argon-arc welding is in all cases performed on current of direct polarity. Conditions of weld-

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S/135/62/000/002/003/010  
A006/A101

On the problem of welding ...

ing copper depend on the number of factors including thickness, shape and dimensions of the parts to be welded, chamfering of the edges, etc. Since copper is prone to porosity and embrittlement, and has high heat-conductivity, tight and plastic joints can not be obtained when welding copper that contains over 0.01% oxygen. When welding 10 mm thick bimetals, the edges should be asymmetrically double V-shaped, and the chamfering angle should be 30-35°. High-quality weld joints are produced by automatic submerged-arc welding with an electrode wire of 2 mm in diameter, having the same composition as the base-metal. Mechanical and corrosion tests of the weld joints yielded the following results: in welding copper and brass, considerable grain growth takes place in the weld-adjacent zone; grain growth is not observed in bronze. Bronze and brass do not yield a distinct fusion boundary, which is very distinct in copper. In manual welding of a cladding layer a non-ferrous metal does not penetrate into the steel. In automatic welding the steel is overheated in a number of cases, grain growth takes place and Widmannstaetten structure is formed. In the case of intensified welding conditions, non-ferrous metals penetrate into the steel seam to a depth of 2 - 3 grains. Corrosion tests showed that the corrosion resistance of steel-copper and steel-brass bimetals exceeds that of the base metal. The corrosion resistance of welds with a bronze cladding layer in acetic acid, after manual arc welding, is equal to that

Card 2/3

33549

S/135/62/000/002/003/010  
A006/A101

On the problem of welding ...

of the base metal. It is somewhat lower after automatic welding. Bronze welds are sometimes prone to structural corrosion; if proper welding conditions have been selected this defect is not observed. There are 5 tables, 5 figures and 4 references; 3 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: NIIKhIMMASH

Card 3/3

X

L 25692-65 EWT(m)/EWA(d)/EWP(z) T/EWP(t)/EWP(k)/EWP(b) Pf-L/Pad IJP(c)  
 MJN/JP/WM/WH/WE

AUTHOR: Krutikov, A. N. (Candidate of technical sciences); Istrina, Z. F.  
 (Engineer); Anisimov, I. M. (Doctor of technical sciences); Fomichov, Ye. M. (Engineer)

TITLE: Welding and applications of steels with a relatively low nickel content

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 1, 1965, 30-34

TOPIC TAGS: low nickel steel, steel welding, stainless steel, steel corrosion, steel heat treatment, chloride ion welding, intercrystalline corrosion, weld seam standing, steel OKh21N5T, steel OKh21N6M2T

ABSTRACT: Three stainless steels with a relatively low nickel content (OKh21N5T, 1Kh21N5T and OKh21N6M2T) were tested for weldability and for the corrosion stability of welded or thermally treated segments to define the applicability of such steels under commercial conditions. The samples were manually welded by electrode using various electrodes, and also with a number of welding rods used in argon arc welding. Welded joints and specimens which had been heated 15 min. at 1100C or 3 min. in a salt bath at 1100 or 1250C were tested for intercrystalline corrosion. Both welding methods were shown to be usable, and the electrode TsL-11 with welding rod Sv-08Kh19Ni-8 was selected for OKh21N5T, whereas the electrode EA-400/10 was recommended for OKh21N6M2T.

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L 25692-65

ACCESSION NR: AP5003578

Welded joints produced under similar conditions as used for welding type 18-8 steels did not require thermal aftertreatment and had good mechanical properties and resistance to intercrystalline corrosion. The corrosion stability of thermally treated specimens as a function of temperature and weld type, as shown in Fig. 1 of the enclosure, along with data on mechanical properties, is given in Tables 1 and 2.

ASSOCIATE: NIKKhimmas

SUBMITTED: 6

DATE: 17

SUB CODE: MM

L 25692-65

ACCESSION NR: AP5003578

Enclosure: 01

NO. 1	Temperature of secondary annealing									
	Sintering temperature of secondary annealing									
	Sintering temperature of secondary annealing									
	Sintering temperature of secondary annealing									
NO. 2	Temperature of secondary annealing									
	Sintering temperature of secondary annealing									
	Sintering temperature of secondary annealing									
	Sintering temperature of secondary annealing									
NO. 3	Temperature of secondary annealing									
	Sintering temperature of secondary annealing									
	Sintering temperature of secondary annealing									
	Sintering temperature of secondary annealing									

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L 25692-65

ACCESSION NR: AP5003578

Steel 0Kh21N6M2T

Enclosure: 02 0

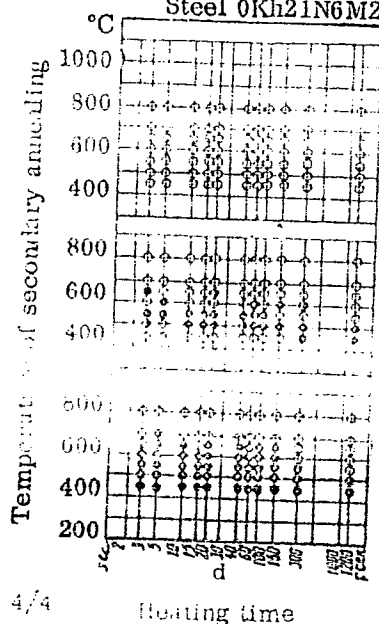


Figure 1. The effect of thermal treatment and repeated heating on the resistance of steel to intercrystalline corrosion:

- a. without thermal treatment (in the initial state);
- b. after 15 min. tempering at 1100°C;
- c. after 3 min. tempering at 1100°C;
- d. after 3 min. tempering at 1250°C;
- o. no intercrystalline corrosion;
- . intercrystalline corrosion

Card 4/4

Heating time

7726-1, V. I.

REZNIK, A.M. (brigadir), AREST, V.I., BLOKH, I.M., KIKGOF, Yu.A.,  
ZAGARMISTR, A.M., KUPALOV-YAROPOLK, I.K., PETROV, L.V., TYABIN, V.Ye.,  
FEDORENKO, A.N., sostaviteli; DYUKOV, A.I., KLESHCHEV, A.I., redaktory.

[All-Union unified norms for geophysical field work] Vsesoiuznye  
edinye normy vyrabotki na polevye geofizicheskie raboty. [Sostavi-  
teli: Reznik A.M. i dr. Redaktory: A.I.Diukov, A.I.Kleshchev] Mo-  
skva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry,  
1951. 146 p.

(MLRA 7:4)  
(Geophysics)

AREST, V.I.

Determining the scales and accuracy of gravimetric surveys. Geofiz.  
razved. no.3:97-99 '61. (MIRA 17:2)

AREST, Ya.

Scouts of the future ("What it means to work and live in the communist  
way" by A.Karlov, A.Mukhanov, K.Semenov. Reviewed by IA.Arest).  
Sov.profsoiuzy 17 no.10:46 My '61. (MIRA 14:5)  
(Socialist competition) (Karlov, A.)  
(Mukhanov, A.) Semenov, K.)

ARESTEANU, L., dr.; NICOLAU, Silvia, chim.; RUBINGHER, Lidia, chim.;  
ANDREIAS, Cornelia, stud.; DULCEANU, Iosefina, asist. med.

Apropos of coexisting pancreatic disease in patients with chronic hepatitis and post-hepatitis liver cirrhosis. Value of the combined pancreozymin and secretin test. Med. intern. (Bucur.) 17 no.9:1111-1118 S '65.

1. Lucrare efectuata in Clinica medicala de semiologie, Spitalul "Dr. Carol Davila", Institutul medico-farmaceutic, Bucuresti (director: conf. S. Ciorgiaciu).

BERONIADE, V.; ARESTEANU, L.; ANTONESCU, C.

Lung tumors associated with hypertrophic pulmonary osteoarthropathy and gynecomastia. Med. int., Bucur. 10 no.1:137-146 Jan 58.

(LUNG NEOPLASMS, complications

hypertrophic pulm. osteoarthropathy & gynecomastia)

(OSTEOARTHROPATHY, HYPERTROPHIC PULMONARY, complications

lung tumors & gynecomastia)

(GYNECOMASTIA, complications

hypertrophic pulm. osteoarthropathy & lung tumors)

DIMITRIU, C.C., prof.; BULIGESCU, L., dr.; ARESTEANU, L., dr.; SUCIU, Dan, dr.; TOMESCU, V., dr.; MARINESCU, M.dr.; ANDRONESCU, M., dr.; SOLOMON, Sela, dr.

The importance of early diagnosis of postviral chronic hepatitis.  
Med. inter., Bucur 13 no.5:673-678 My '61.

1. Lucrare efectuata in Clinica medicala a Spitalului "C.Davilla", I.M.F., Bucuresti.

(HEPATITIS, INFECTIOUS complications)  
(LIVER CIRRHOSIS prev. & control) (HEPATITIS diagnosis)

76-32-4-21/43

AUTHORS: Tsybina, Ye. N., Gel'bshteyn, A. I., Arest-Yakubovich, A. A.,  
Temkin, M. I.

TITLE: The Kinetics of the Vapor Phase Hydration of Acetylene in the  
Presence of a Carbon-Supported Phosphoric Acid Catalyst  
(Kinetika parofaznoy gidratatsii atsetilena v prisutstvii  
katalizatora - fosfornaya kislota na ugle)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 4,  
pp. 856 - 863 (USSR)

ABSTRACT: Investigations in the field of acetylene hydration were already  
carried out by A. P. El'tekov (Reference 1), M. G. Kucherov  
(Reference 4-6) and others so that the present paper is a  
continuation of a previous one by A. Ya. Yakubovich, A. A.  
Danilevich and N. A. Medzykhovskaya (Reference 9). Externally  
there is apparently present an heterogenous catalytic process;  
in fact it is an homogenously catalytic process which takes  
place in liquid dissolved acetylene. From the technique applied  
can be seen that the authors used the passage system within

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76-32-4-21/43

The Kinetics of the Vapor Phase Hydration of Acetylene in the Presence of a Carbon-Supported Phosphoric Acid Catalyst

a temperature interval of from 261 - 302°C and with using activated charcoal BAU ; the catalyst was produced of this according to a method by N. M. Chirkovyy. From the results obtained can among other facts be seen that no retardation of diffusion of the process takes place and that the reaction velocity at a constant phosphoric acid concentration corresponds to an equation of first order. The increase of the pressure of steam leads to a decrease of the reaction velocity which is explained by the dilution of the acid. It was observed that parallel to the hydration an acetylene polymerization and croton condensation of acetaldehyde takes place. A. L. Klebanskiy and V. D. Titov (Reference 18) investigated the reaction mechanism of unsaturated compounds which were catalized by strong acids; they did this by investigating the alkylic acids formed as intermediate products. The hydration velocity of acetylene is proportional to its concentration as well as to the acidity of the medium and is dependent on the activity of water. This is

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The Kinetics of the Vapor Phase Hydration of Acetylene in the Presence of  
a Carbon-Supported Phosphoric Acid Catalyst

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explained by a monomolecular conversion of the product of  
proton addition to the acetylene molecule as reaction limit.  
The products are regarded as  $\pi$ -complexes of acetylene with  
a proton in the carbonium ion. Concluding from this a reaction  
scheme is given and the activation energy is calculated taking  
into account the temperature dependence of the activity of the  
catalyst. There are 1 figure, 3 tables, and 21 references, 14  
of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva (Moscow  
Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: December 27, 1956

AVAILABLE: Library of Congress

1. Acetylene--Hydration
2. Phosphoric acid--Catalytic properties

Card 3/3

L 36632-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5001515

S/0020/64/159/005/1066/1068

AUTHOR: Arest-Yakubovich, A. A.; Medvedev, S. S. (Academician)

TITLE: Anionic polymerization of butadiene in tetrahydrofuran

SOURCE: AN SSSR. Doklady, v. 159, no. 5, 1964, 1066-1068

TOPIC TAGS: butadiene, polymerization, tetrahydrofuran, solvation, polymerization initiator, alkali metal, reaction rate

ABSTRACT: A study was made of the polymerization kinetics of butadiene in tetrahydrofuran (THF) in the presence of alkali metal complexes with biphenyl in a broad temperature interval. In the majority of cases measurements were carried out dilatometrically. The kinetics of the most rapid processes which occur in the presence of potassium and cesium initiators at -30C and higher were investigated by determining the yield of the polymer in a definite period of time in a thermostated reactor with a high speed stirrer. The change of the rate of reaction with time is described well by the first order equation with respect to the

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L 36632-65

ACCESSION NR: AP5001515

monomer. At -96 C the rate of reaction is directly proportional to the concentration of the initiator within  $2 \cdot 10^{-3}$  -  $3 \cdot 10^{-2}$  mole/l limits. It was found that the rate of polymerization and the structure of polybutadiene depends on the nature of the counter ion. The preliminary data indicate that the use of solvent with even greater solvation ability than THF, such as dimethoxyethane, leads to a significant increase of the rate of sodium initiated polymerization of butadiene. The authors wish to express their gratitude to A. R. Gantmakher for his interest in this work and discussion of the results and to N. V. Desyatova for the determination of the microstructure of polybutadiene by the infrared spectroscopy method. Orig. art. has: 2 tables and 2 figures

ASSOCIATION: Fiziko-Khimicheskiv Institut im. L. Ya. Karpova (Institute of Physical Chemistry)

SUBMITTED: 13Jul64

ENCL: 00

SUB CODE: MT, GC

NR REF SOV: 005

OTHER: 002

Card 2/2

S/195/60/001/004/015/015  
B017/B055

AUTHORS: Arest-Yakubovich, A. A., Bagdasar'yan, Kh. S.

TITLE: Moscow International Symposium on Macromolecular Chemistry

PERIODICAL: Kinetika i kataliz, 1960, Vol. 1, No. 4, pp. 627-629

TEXT: The International Symposium on Macromolecular Chemistry was held in Moscow on June 14-18, 1960. Three questions were treated: 1) polymer synthesis, 2) polymerization- and polycondensation processes and 3) chemical transformations in polymers. A total of 170 papers and communications were read. Three papers were read at the plenary session, among them one by N. N. Semenov on reactions common to polymerization processes and to polymers with conjugate bonds. S. Ye. Bresler, E. N. Kazbekov, and Ye. M. Saminskiy reported on the chemical behavior of macroradicals formed during mechanical destruction of glassy polymers in vacuum. Kh. S. Bagdasar'yan and Z. A. Sinitsyna determined the reaction constants of reactions of polymer radicals such as, e.g., vinyl acetate, methyl acrylate, and acrylonitrile with various aromatic compounds, especially those containing nitro groups. F. Tüdes, I. Kendő and M. Azori (Hungary)

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Moscow International Symposium on  
Macromolecular Chemistry

S/195/60/001/004/015/015  
B017/B055

investigated the inhibition of styrene polymerization by trinitro benzene and its derivatives. G. A. Razuvayev, L. M. Terman, V. R. Likhterov and V. S. Etlis discussed studies on the kinetics and chemical mechanism of the thermal decomposition of several peranhydrides and perester radicals in various solvents. Some 20 papers were read on the subjects of ionic and stereospecific polymerization. S. S. Medvedeva and A. P. Gantmakher reported on an investigation on the kinetics and mechanism of polymerizations under the catalytic action of organolithium compounds. A. A. Korotkov and collaborators investigated the polymerization of methyl methacrylate in toluene. K. Vesely, as well as Z. Zlamala and A. Kazda (CSSR) discussed cationic polymerization. V. Boček (CSSR) described interesting results of polymerizing propylene on  $\text{Al}(\text{C}_2\text{H}_5)_3$  and mixed crystals of  $\text{TiCl}_3$  or  $\text{TiCl}_2$  with halides of metals of the groups II to VIII. B. L. Yeruslimskiy reported on the dependence of the structure of isoprene and butadiene polymers prepared with  $\text{C}_4\text{H}_9\text{MgJ} + (\text{C}_4\text{H}_9)_2\text{Mg} + \text{TiCl}_4$  as catalyst on the composition of the catalysts. V. A. Kargin and N. A. Plate showed that the polymerization mechanism depends on the nature of the solid phase and the

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Moscow International Symposium on  
Macromolecular Chemistry

S/195/60/001/004/015/015  
B017/B055

monomer. Polymerization in the solid state was treated in papers by V. A. Kargin and V. A. Kabanov, A. V. Volokhina and G. I. Kudryavtseva. A. D. Abkin discussed polymerization under the action of radiation and the effect of radiation on polymers. Apart from these papers, numerous papers and communications were presented on the preparation and properties of new polymers and on various conversions in polymer chains.

SUBMITTED: September 5, 1960

Card 3/3

AKES L. YAKUBOVICH, M.D.

To be submitted for the International Symposium on Macromolecular Chemistry,  
Montreal, Canada, 27 Jul - 1 Aug 1964.

USSR

- SHIMIZU, T. K., Institute of High Molecular Chemistry, Academy of Sciences USSR, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "Elasticity of the helical chain polymers" (Group 2)
- SHIMIZU, T. K., and KARNO, M., Moscow Institute of High Molecular Chemistry, Academy of Sciences USSR - "Interpretation of polyethylene with sulfur" (Group 4-5)
- SHIMIZU, T. K., and KARNO, M., Laboratory of Colloidal Chemistry, Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "The formation of big crystal structures in polymers and their properties" (Group 2, Invited lecture)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., Institute of High Molecular Chemistry, Academy of Sciences USSR - "Polymerization of some epoxy compounds" (Group 3-5)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., and RIKHMAN, V. R., Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "Polymerization catalyzed by lithium and lithium alkyl" (In German) (Group 3-5)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., and RIKHMAN, V. R., Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "On the catalytic polymerization of methacrylates of aliphatics" (Group 3-4)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., and RIKHMAN, V. R., Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "Temperature effect on polymer structure in dense polymerization by alkyl metals" (Group 3-5)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., and RIKHMAN, V. R., Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "Study of branching in regular isoprene polymers" (Group 1)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., and RIKHMAN, V. R., Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "Nature of molecular-weight distribution and properties of styrene-butadiene rubbers depending on polymerization conditions" (Group 3-4)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., and RIKHMAN, V. R., Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "Mechanism of polymerization of some monomers containing quaternary atoms of carbon" (Group 4-5) (Invited lecture)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., and RIKHMAN, V. R., Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "Stereoregularity and optical activity of macromolecules" (Group not specified)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., and RIKHMAN, V. R., Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "The investigation of the cotton cellulose polydispersity according to the molecular weight" (Group not specified)
- SHIMIZU, T. K., and KARNO, M., and YAKUBOVICH, L. A., and RIKHMAN, V. R., Scientific Research Physico-Chemical Institute, Leningrad, jointly with RIKHMAN, V. R., and KARNO, M., of the University, Dnepropetrovsk, U.S.S.R. - "On the kinetics of formaldehyde polymerization and polyformaldehyde degradation" (Group 3-5)



15-8610

25263

S/190/61/003/007/007/021  
B101/B208

AUTHORS: Arest-Yakubovich, A. A., Gantmakher, A. R., Medvedev, S.S.

TITLE: Conditions of the formation of metalaromatic initiators of polymerization

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 7, 1961, 1003-1009

TEXT: The paper deals with the problem of catalytic polymerization, initiated by electron transfer from the atom of the alkali metal to the molecule of an aromatic compound which has a sufficiently high affinity to the electron:  $Me + Ar \rightleftharpoons Me^+ + Ar^-$  (1). The general conditions were studied for the course of this reaction, in order to synthesize metal-aromatic complexes of different structure and to study the polymerization mechanism in the presence of such initiators. All operations were performed either in high-vacuum or anhydrous and oxygen-free nitrogen atmosphere. The following results are given: 1) Interaction between alkali metals and aromatic compounds in hydrocarbon medium. To prevent inactivation of the metal by a film from the reaction products with the

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S/190/61/003/007/007/021  
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aromatic compound, the experiments were carried out above the melting point of the metal. Sodium gave at 110-120°C in octane or toluene no reaction products with naphthalene or phenanthrene, even after 5-8 hr. With anthracene, Na gave at this temperature a red-violet, at 140-160°C a black powder. This product was completely soluble in tetrahydrofuran (THF) and triethylamine (TEA). These solutions had a characteristic color. The eutectic alloy of K with Na (85% K) quickly reacted with naphthalene and diphenyl at room temperature in hydrocarbon medium. Gray-black powders were formed. No reaction took place in the presence of benzene. In general, however, metalaromatic complexes will also be formed in non-electron-donor medium, if the metal has a low ionization potential and the hydrocarbon a high affinity to the electron. 2) Reactions in TEA medium. Lithium forms with naphthalene a cherry-red solution at room temperature. No reaction was observable with diphenyl even after 10 days. Na with phenanthrene gives only weakly colored solutions, but, with anthracene, quickly a solution which was green in the reflected light, and red in the transmitted light. A greenish-black film is formed on K under the action of naphthalene, which was insoluble in TEA. 3) The metalaromatic complexes were isolated after reaction in THF medium by filtering and subsequent

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S/190/61/003/007/007/021  
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evaporation of the solvent in the high vacuum. Sodium-naphthalene decomposed after removing THF to give its initial components, sodium-anthracene was stable. In the complex of potassium-naphthalene, a black powder, the K/naphthalene ratio was 1:1. In the case of lithium-naphthalene, THF could not be completely removed. This is explained by the property of Li to form complexes with ethereal (oxygen-containing) solvents. 4) The initiating effect of metalaromatic compounds was studied on polystyrene. In the presence of Na-naphthalene, polymerization proceeded very quickly not only in pure THF, but also in toluene + 2-4% THF. In the presence of Na-anthracene (about  $10^{-3}$  mole/l) polymerization in toluene + TEA = 1:1 proceeded slowly at 25°C, but was accelerated by a temperature rise. Na-anthracene initiates styrene polymerization also in inert medium (toluene). The solid sodium-aromatic complex dissolves, and the reaction rate increases more and more. 5) To estimate the probability of an interaction between alkali metal and aromatic compound forming soluble products, the following equation is discussed:  
 $\Delta E = -L - I + A + S_c + S_a + Q$  (4), where  $\Delta E$  denotes the change in energy in the reaction, L the sublimation heat of the metal, I its ionization

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potential,  $A$  the affinity of the aromatic compound to the electron,  $S_c$ ,  $S_a$  the solvation energy of the cation and anion, respectively, and  $Q$  the energy of the coulomb interaction between the latter two. Basing on published data the following is written for the formation rate of metal-aromatic complexes:  $Li < Na < K$ ; benzene  $<$  diphenyl  $<$  naphthalene  $<$  phenanthrene  $<$  anthracene. But in some cases the cation of lithium reacts more intensely than  $K$  and  $Na$ , owing to solvation. A figure illustrates schematically the conditions for the formation of metalaromatic complexes. There are 1 figure, 2 tables, and 29 references: 9 Soviet-bloc and 18 non-Soviet-bloc. The 4 most important references to English-language publications read as follows: M. Szwarc, M. Levy, R. Milkovich, J. Amer. Chem. Soc., 78, 2656, 1956; D.H. Richards, M. Szwarc, Trans. Faraday Soc., 55, 1644, 1959; J.P.V. Gracey, A.R. Ubbelohde, J. Chem. Soc., 1955, 4089; R.M. Hedges, F.A. Matsen, J. Chem. Phys., 28, 950, 1958.

ASSOCIATION: Fiziko-khimicheskiy institut im. L.Ya. Karpova  
(Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: September 8, 1960

Card 4/5

5 3 8 3 0 2 2 0 9 1 3 7 2 1 2 3 4

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28648  
S/020/61/139/006/013/022  
B103/B101

AUTHORS: Arest-Yakubovich, A. A., Gantmakher, A. R., and Medvedev, S. S.,  
Academician

TITLE: Anionic polymerization in the presence of aromatic compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 6, 1961, 1351-1353 X

TEXT: The aim of this article was to find out whether aromatic hydrocarbons participate in an anionic chain growth. The authors found that the anionic polymerization of styrene (in tetrahydrofuran, initiated by sodium-aromatic complexes) is strongly retarded by anthracene. The retardation depends on the ratio of anthracene to styrene. Anthracene exerts an inhibitory effect both if it is added together with the initiator (sodium naphthalene or sodium anthracene) and if a styrene - anthracene mixture is added to "live" polystyrene obtained from sodium naphthalene or sodium diphenyl. The authors conclude that this process takes place with a constant number of active centers. This number is equal to the amount of the initiator used and no chain transfer takes place. Hence, the mentioned retardation is not related to the decrease of the number of

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Anionic polymerization in the presence ... B103/B101

active centers as a result of the shift of the initiation equilibrium of  $A^* + C \rightleftharpoons A + C^*$  (II) to the left-hand side. A is anthracene and C styrene; the asterisks denote the ion radicals, i. e. the molecules having an excess electron. Hence, the excess electrons completely pass from anthracene into styrene. The lacking of  $A^*$  in the system was also spectrophotometrically confirmed. The complete consumption of  $A^*$  is explained

by an irreversible consumption of  $C^*$  as a result of the reaction with the monomer and of recombination. Also the low monomer consumption in the initial stage which results from an abrupt retardation of the growth reaction in the presence of anthracene contributes to this effect. This retardation is probably related to the participation of anthracene in growth processes. It is assumed that a joint polymerization of anthracene and styrene takes place since anthracene is very active in the radical reactions. Publications contain no data on the participation of anthracene in anionic copolymerization. The kinetic effects observed by the authors justify the assumption that anthracene adds to the carbanions of styrene thus forming a rather stable and little active anion since the charge is considerably delocalized. This assumption was confirmed

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Anionic polymerization in the presence ... <sup>28648</sup> S/020/61/139/006/013/022  
B103/B101

experimentally. An amount of anthracene that was three times higher than the number of active centers was added to a solution of "live" polystyrene (obtained with sodium naphthalene). The electron spectra showed that anthracene copolymerizes with styrene. In contrast to ordinary "live" polymer whose spectrum is essentially changed already one day after the production, the spectrum of the polymer produced from anthracene remains practically unchanged for three days. The shift of the maximum can be explained either by the complex formation between anthracene and the active centers of polymerization which takes place according to M. Levy (Ref. 7, see below) or the shifted maximum  $445 \text{ m}\mu$  corresponds to the anthracene carbanions at the ends of the polymer chains. Large amounts of naphthalene (up to 50% as referred to styrene) influence neither the reaction rate nor the molecular weight. However, they essentially change the spectrum of the "live" polymer. The maximum at  $340 \text{ m}\mu$  disappears while maxima at  $430$  and  $550 \text{ m}\mu$  reappear. The polymer is capable of absorbing further monomer portions while keeping its changed spectrum. The polymerization of a less active monomer as, e. g., butadiene, is more strongly inhibited by anthracene. Thus, anionic polymerization of butadiene at  $20^\circ\text{C}$  practically stops already at an anthracene-to-butadiene

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S/020/61/139/006/013/022  
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ratio of 1 : 30. It is concluded from the spectral data that "live" polybutadiene reacts with anthracene in the same way as "live" polystyrene. There are 2 figures and 11 references, 3 Soviet and 8 non-Soviet. The two most important references to English-language publications read as follows: Ref. 1: M. Szwarc, M. Levy, R. Milkovich, J. Am. Chem. Soc., 78, 2656 (1956); Ref. 7: M. Levy, F. Cohen-Bosidan, Polymer, 1, 517 (1960).

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova  
(Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: May 18, 1961

Card 4/4



37435

S/190/62/004/005/011/026  
B110/B144

52230

AUTHORS: Solovykh, D. A., Arest-Yakubovich, A. A., Gantmakher, A. R.,  
Medvedev, S. S.

TITLE: Polymerization of styrene and butadiene initiated by sodium  
naphthalene in weakly polar media

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 5, 1962,  
702-703

TEXT: The activation energy and rate constants of the homogeneous polymerization of styrene and butadiene with organosodium initiators in hydrocarbon media in the presence of small tetrahydrofuran additions were determined for the first time by a two-stage method. First, "live" polymers were obtained by preliminary polymerization of  $\sim 1/6$  of the monomer with sodium naphthalene in a tetrahydrofuran medium, and were then used as polymerization initiators in toluene or cumene with tetrahydrofuran. The polymerization rate was measured between  $-60$  and  $-35^{\circ}\text{C}$  and the initiator concentration was determined from  $c = 2m/M$ , where  $m$  is the amount of polymerized monomer in g,  $c$  is the number of initiator moles, and  $M$  is the

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Polymerization of styrene and ...

S/190/62/004/005/011/026  
B110/B144

molecular weight of the polymer. Toluene caused chain transfer during butadiene polymerization with 6.5% tetrahydrofuran. The polymerization rate of styrene and butadiene in toluene was found to increase with transition from organolithium to organosodium initiators. There is 1 table.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova  
(Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: March 31, 1961

Card 2/3

L 16985-63  
Pr-4 RM/WW/JD

EPR/ENP(j)/EPF(c)/ENP(g)/ENT(m)/BDS AFFTC/ASD Ps-4/Pc-4/  
S/020/63/149/005/009/018

AUTHOR: Basova, R. V., Arest-Yakubovich, A. A., Solovykh, D. A.,  
Desyatova, N. V., Gantmakher, A. R., and Medvedev, S. S. 79

TITLE: Polymerization of butadiene in the presence of alkali metals  
and their compounds in different media 27

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 5, 1963, 1067-1070

TEXT: Literature on the polymerization of dienes, initiated by alkali metals and their compounds, notes that the proportion of structures characteristic of the anion type of polymerization, contrary to expectations, decreases with increasing polarity of the Me-R bond (Me -- alkali metal) in hydrocarbon media. The authors of this work, devoted to investigation of the effect of polymerization conditions on the structure of butadiene, pay special attention to this problem. The investigation was performed under vacuum conditions, with prior thorough cleaning of monomers and solvents. The results obtained show that the increase in the proportion of 1,2-structures of polybutadiene and 3,4-structures of polyisoprene, observed upon transition from potassium to sodium compounds in a hydrocarbon medium is due to the presence of impurities solvating the opposite-charged ions. There are 2 tables.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-  
chemical Institute imeni L. Ya. Karpov) SUBMITTED: January 10, 1963

Card 25

ACCESSION NR: APL017635

S/0190/64/006/002/0217/0252

AUTHOR: Arest-Yakubovich, A. A.

TITLE: Interaction between the carbanions of "active" polymers and condensed aromatic compounds

SOURCE: Vy\*sokomolekulyarny\*ye soyedineniya, v. 6, no. 2, 1964, 247-252

TOPIC TAGS: polymer, polystyrene, poly alpha methylstyrene, condensed aromatic compound, 9, 10 diethylantracene, anthracene, active polymer, carbanion, electron transfer, tetrahydrofuran, ion radical

ABSTRACT: The interaction of anthracene (A) with poly-alpha-methylstyrene (PAMS) and of 9, 10-diethylantracene (DEA) with polystyrene (PS) was studied by a technique described by the author, A. R. Gantmakher, and S. S. Medvedev (Sb.: Karbotsepy\*ye vy\*sokomolekulyarny\*ye soyedineniya, Izd. AN SSSR, 1963, 87). The tests were conducted in tetrahydrofuran, at room temperature, followed by spectroscopic and electron paramagnetic resonance (PMR) examination. It was found that the absorption spectrum of the system A-PAMS in a 1:1 ratio acquires within 24 hours sharp maxima at 327 and 369 millimicrons, while the peaks of free anthracene weaken and disappear altogether within 2-3 days. The spectrum of the DEA-PS

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ACCESSION NR: AP/017635

system changed within a few days. The observations obtained by means of the PMR technique were generally in agreement with those obtained by spectroscopy, but for the system A-PAMS a ratio of 6:1 was required before a weak signal appeared within 5-7 days, indicating a transition into ion-radicals of only approximately 1% of the carbanions. The theory of electron transfer from the polymeric carbanion to the aromatic component is discussed at length. The author thanks A. Kotov for the measurement of PMR spectra, and S. S. Medvedev and A. R. Gantmakher for their interest in the problem and discussion of results. Orig. art. has: 2 tables, 2 charts, and 5 formulas.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova ( Physicochemical Institute)

SUBMITTED: 15 Nov 62

DATE ACQ: 23 Mar 64

ENCL: 00

SUB CODE: CH

NO REF SOV: 004

OTHER: 007

Card 2/2

AREST YAKUBOVICH, A.A.; MEDVEDEV, S.S., akademik

Anionic polymerization of butadiene in tetrahydrofuran. Dokl.  
AN SSSR 159 no.5:1066-1068 D '64 (MIRA 18:1)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova.

L 27116-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6012713

(A)

SOURCE CODE: UR/0190/66/008/004/0681/0685

AUTHOR: Arest-Yakubovich, A. A.; Medvedev, S. S.

ORG: Physicochemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut im. L. Ya. Karpova)

TITLE: Effect of the nature of counter ions and the medium in anionic polymerization of butadiene

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 4, 1966, 681-685

TOPIC TAGS: butadiene, polymer, polymerization kinetics, polymerization rate, polymer structure, counter ion

ABSTRACT: The basic factors determining the kinetics of butadiene polymerization in electron-donor compounds and the microstructure of the polymer were investigated. It was found that the polymerization rate greatly depends on the nature of the counter ion and the solvent. The polymerization rate sharply increases in the series lithium < sodium < potassium at temperatures above -60C. The polymerization rate is also greatly increased during the transition from tetrahydrofuran to dimethoxyethane. During a gradual change in the composition of the tetrahydrofuran and dimethoxyethane solvent, the polymerization rate is linearly changed without a sharp increase in the range of low dimethoxyethane concentrations. The polymer microstructure greatly depends on the reaction temperature of polymerization and on the nature of the counter-

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UDC: 66.095.26+678.762

L 27116-66

ACC NR: AP6012713

ion. The authors thank A. R. Gantmakher for his interest in this work and fruitful discussions of the results. Orig. art. has: 2 figures and 2 tables. [NT]

SUB CODE: 11, 07/ SUBM DATE: 22Apr65/ ORIG REF: 008/ OTH REF: 003

Card

2/2

BK



5(3)

AUTHORS:

Furman, M. S., Shestakova, A. D., SOV/20-124-5-34/62  
Arest-Yakubovich, I. L., Lyubitsyna, N. A.

TITLE:

Oxidation of n-Butane Solved in Acetic Acid by Air Under Pressure (Okisleniye n-butana v rastvore uksusnoy kisloty vozdukhom pod davleniyem)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 1083-1084 (USSR)

ABSTRACT:

Under relatively high temperatures (350-400°) the oxidation of butane in the gaseous phase results in an entire scale of oxygen-containing products (Refs 1-3). It has recently been pointed out (Refs 4-8) that the oxidation of n-butane under pressure in the liquid phase is much more selective and leads under milder conditions to valuable organic products: acetic acid, ethyl acetate, and methyl-ethyl ketone. This oxidation can be effected either below the critical temperature of butane ( $T_c = 152^\circ$ , Refs 4,5) or above the same, with the aid of solvents (Refs 6-8). The latter method seems to be more promising. The authors have chosen acetic acid as a solvent in which butane is soluble and which under the existing conditions is indifferent to oxidation and forms itself an oxidation product

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Oxidation of n-Butane Solved in Acetic Acid by Air  
Under Pressure

SOV/20-124-5-34/62

of butane. Cobalt stearate was used as a catalyst. The experiment was carried out through six hours at various velocities of the air stream which served for oxidation. Figure 1 shows the results. They make the advantages of the oxidation above  $T_c$  apparent. Figure 2 contains statements on the influence of the catalyst on the process carried out at 60 atmospheric excess pressure and  $165^\circ$ . The catalyst increases the yield of useful products and directs the process toward a predominant formation of acetic acid. There are 2 figures and 8 references, 3 of which are Soviet.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proektnyy institut azotnoy promyshlennosti (State Scientific Research and Design Institute for Nitrogen Industry)

PRESENTED: October 8, 1958, by S. I. Vol'fkovich, Academician

SUBMITTED: September 19, 1958

Card 2/2

S/064/61/000/001/001/011  
B110/B215

AUTHORS: Furman, M. S., Shestakova, A. D., Arest-Yakubovich, I. L.

TITLE: Oxidation of n-butane in liquid phase under pressure

PERIODICAL: Khimicheskaya promyshlennost', no. 1, 1961, 6-11

TEXT: Oxidation of hydrocarbon in liquid phase takes place at lower temperatures (100-200°C) than in gaseous phase (350-400°C). The destruction of important oxidation products is thus excluded and the reaction is more selective. ✓  
The main products of oxidation of n-butane in liquid phase are  $\text{CH}_3\text{COOH}$ ,

$\text{CH}_3\text{COOC}_2\text{H}_5$  and  $\text{CH}_3\text{COOC}_2\text{H}_5$ , whereas  $\text{HCHO}$ ,  $\text{CH}_3\text{CHO}$ ,  $\text{CH}_3\text{OH}$ ,  $\text{C}_2\text{H}_5\text{OH}$ ,  $\text{CH}_3\text{COCH}_3$ ,  $\text{HCOOH}$ , and  $\text{CH}_3\text{COOH}$  are formed in the gaseous phase. To accelerate the

reaction, n-butane is dissolved in acetic acid (main reaction product). Oxidation takes place above the critical temperature of  $\text{n-C}_4\text{H}_{10}$  (152°C).

Pressure pipe (4) serves for conducting the oxidizing air into the acetic solution of n-butane contained in the reaction vessel (2) made of glass or

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B110/B215

Oxidation of n-butane in liquid...

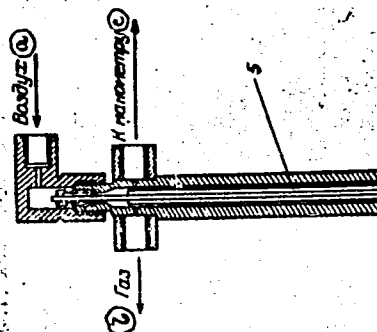
titanium, which had been put into the steel autoclave (1) (Fig. 2). After passing the reflux condenser, the reaction gases still contain 8 - 10% of butane.  $\text{CO}_2$ ,  $\text{O}_2$ ,  $\text{CO}$ ,  $\text{C}_4\text{H}_{10}$ , and  $\text{N}_2$  were determined in the gaseous reaction products, while  $\text{CH}_3\text{COOH}$ ,  $\text{CH}_3\text{COOC}_2\text{H}_5$ , and  $\text{H}_2\text{O}$  were established in the liquid products. For maximum butane transformation in optimum yields of acetic acid, the following data were obtained by constant addition of 340 g of butane dissolved in acetic acid: ratio butane / acetic acid = 0.5 / 1 (Fig. 3); duration of experiment: 3 hr, reaction temperature  $165^\circ\text{C}$ , air supply 110 - 120 Nl/hr, amount of catalyst: 0.05 g of a solution of 0.018% of cobalt stearate in aqueous acetic acid. Pressure increase from 50 to 80 atm did not affect the composition of the reaction products but accelerated the reaction due to an increase in the  $\text{O}_2$  concentration in the reaction zone. Optimum pressure was 60 atm. It was also found that intermediates of the oxidation such as  $\text{CH}_3\text{COC}_2\text{H}_5$  and  $\text{CH}_3\text{COOC}_2\text{H}_5$  do not inhibit the course of the reaction or reduce the yield of acetic acid. All the other solvents, except acetic acid, reduced the total exchange of butane. Two phases were

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Oxidation of n-butane in liquid...

S/064/61/000/001/001/011  
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obtained in the experiments by G. D. Yefremova and R. M. Koroleva conducted in the GIAP (State Institute of the Nitrogen Industry) on the state of the system butane - acetic acid - water, in which concentrations of acetic acid lower than 90% were used. The ratios butane/acetic acid of these two phases differed. An optimum ratio of 0.5 to 1 can only be guaranteed by concentrations of acetic acid exceeding 90% of the reaction liquid. Therefrom it follows that a 100% acetic acid is best suited as solvent. There are 5 figures, 5 tables, and 18 references: 9 Soviet-bloc and 9 non-Soviet-bloc.

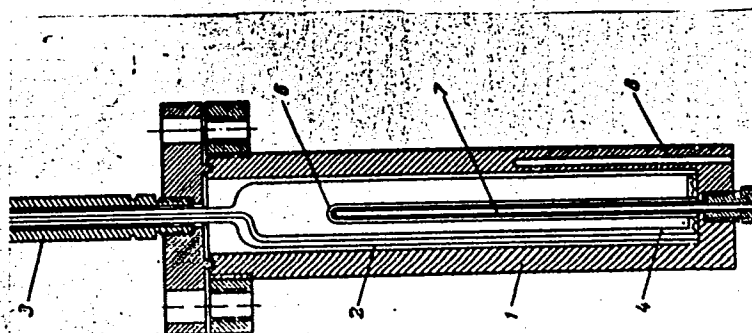


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Oxidation of n-butane in liquid...

S/064/61/000/001/001/011  
B110/B215

Legend to Fig. 2: 1) autoclave,  
2) reaction vessel, 3) attachment to  
the autoclave, 4) pressure pipe,  
5) reflux condenser, 6) container for  
thermocouple of the reaction vessel,  
7) autoclave housing for thermocouple,  
8) housing of thermocouple, a) air,  
b) gas, c) to monometer.

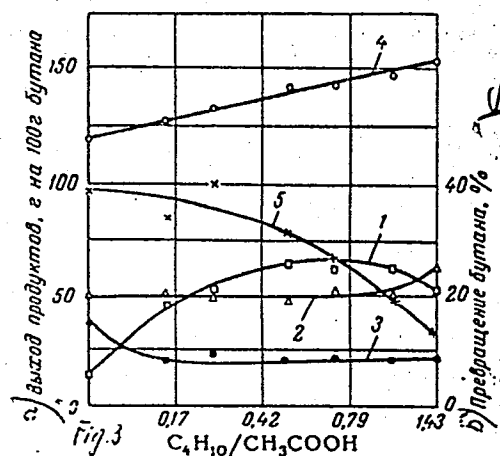


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Oxidation of n-butane in liquid...

S/064/61/000/001/001/011  
B110/B215

Legend to Fig. 3: dependence of the oxidation process on n-butane, weight ratio butane:acetic acid;  $P = 60$  atm,  $t = 165^\circ\text{C}$ ,  $w$  (velocity of air supply) = 120 Nl/hr,  $\tau$  (time of reaction) = 3 hr,  $q$  (amount of catalyst) = 0.03 g, 1) acetic acid, 2) ethyl acetate, 3) methyl ethyl ketone, 4) totality of useful products, 5) butane exchange, a) yield of products in g per 100 g of butane, b) butane exchange in per cents



Card 5/5

COMMON ELEMENTS																												OPEN MATERIAL INDEX																											
1-17 AND OTHER ORDERS														PROCESSES AND PROPERTIES INDEX														18-35 AND OTHER ORDERS																											
<p><b>AREST-YAKUBOVICH, R. Ye.</b></p> <p><i>CH</i></p> <p>Content of scattered elements in some fluorites of the U. S. S. R. I. P. Alimarin and N. E. Arst-Yakubovich. Bull. soc. mineralogistes Moscou, Sect. geol. 12, 575-83 (in English, 583) (1934).—Specimens of colorless, yellow, green and violet fluorite from the Aurakhat and Abagaitui deposits, Siberia, analyzed for 29 elements by microchem. and spectroscopic methods accurate to the 3rd place have shown traces of Li, Na, K, Sr, Be, Cu, Al, Fe and S. The Na, Cu and Sr are accounted for by replacement of Ca ions in the space lattice, the other elements being in a dispersed condition. The color of fluorite is believed to depend on the presence of dispersed metallic Ca, although this is not proved, since the accuracy of the analysis for Ca and F was <math>\pm 0.1\%</math>. The analytical methods used are described.</p> <p>R. H. Beckwith</p>																																																							
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>STONY STRIATION</p> <p>STANDARD #1</p> <p>STANDARD #2</p> <p>STANDARD #3</p> <p>STANDARD #4</p> <p>STANDARD #5</p> <p>STANDARD #6</p> <p>STANDARD #7</p> <p>STANDARD #8</p> <p>STANDARD #9</p> <p>STANDARD #10</p> <p>STANDARD #11</p> <p>STANDARD #12</p> <p>STANDARD #13</p> <p>STANDARD #14</p> <p>STANDARD #15</p> <p>STANDARD #16</p> <p>STANDARD #17</p> <p>STANDARD #18</p> <p>STANDARD #19</p> <p>STANDARD #20</p> <p>STANDARD #21</p> <p>STANDARD #22</p> <p>STANDARD #23</p> <p>STANDARD #24</p> <p>STANDARD #25</p> <p>STANDARD #26</p> <p>STANDARD #27</p> <p>STANDARD #28</p> <p>STANDARD #29</p> <p>STANDARD #30</p> <p>STANDARD #31</p> <p>STANDARD #32</p> <p>STANDARD #33</p> <p>STANDARD #34</p> <p>STANDARD #35</p>																																																							



BC  
AREST-YAKUBOVICH, R. Ye.

Formation of tin hydride in the reduction of hydrochloric acid solutions of tin, in quantitative analysis. I. P. ALINAKIN and R. E. AREST-YAKUBOVICH (J. Appl. Chem. Russ., 1947, 20, 920-923). Reduction of 0.1 g. of Sn in HCl by Zn or Al involves loss of about  $10^{-3}$  g. of Sn as  $\text{SnH}_4$ , while with Mg the loss is  $5 \times 10^{-3}$  g. Dissolution of Sn-Mg-Zn alloys in HCl involves significant loss of Sn as  $\text{SnH}_4$ . R T

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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8

CA  
AREST-YAKUBOVICH, R. Ye.

Composition of jarosites from the deposits of Central Kazakhstan. P. V. Chukhrov, P. R. Arest-Yakubovich  
and N. A. Kozlova. *Compt. rend. acad. sci. U. R. S. S.* 28, 829-31(1940)(in English).—Chem. analyses of jarosites from various deposits were made and the results tabulated. The compn. of a typical sample is:  $\text{Na}_2\text{O}$  5.16;  $\text{K}_2\text{O}$  1.10;  $\text{BaO}$  —;  $\text{CaO}$  0.15;  $\text{MgO}$  0.00;  $\text{PbO}$  0.00;  $\text{CuO}$  0.00;  $\text{Fe}_2\text{O}_3$  49.20;  $\text{Al}_2\text{O}_3$  0.03;  $\text{Mn}_2\text{O}_3$  traces;  $\text{SO}_3$  32.55;  $\text{P}_2\text{O}_5$  0.27;  $\text{As}_2\text{O}_3$  0.04;  $\text{TiO}_2$  0.18;  $\text{SiO}_2$  0.48;  $\text{H}_2\text{O}^*$  10.40;  $\text{H}_2\text{O}^-$  0.05; insol. residue —.

Among the jarosites studied, Na varieties predominate over K varieties. A. H. Krappe

Int. Geol. Sci,  
AS USSR

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

AREST-YAKUBOVICH, R. YE.

May 1947

USSR/Mineral Deposits

"The Minerals of the Cancrinite Group Found in the Vishnev Mountain in the Urals," E. M. Bonshtedt-Kupletskaya, R. E. Arest-Yakubovich, 4 pp

"Doklady Akademii Nauk SSSR" Vol LVI, No 5

Table showing chemical analysis of subject cancrinite.

PA 9T60

ARESTEANU, H., ing. (Bucuresti)

Increase of labor productivity in the electrotechnic industry.  
Electrotehnica 11 no.6:201-209 Je '63.

1. Seful sectorului economic al Directiei generale a industriei  
electrotehnice din Ministerul Metalurgiei si Constructiilor de  
Masini.

RUMANIA

ANDRONESCU, M., MD; ~~ARESTEANU, L.~~, MD; BULIGESCU, L., MD; COLITA, D., MD;  
DEMIRIAN, N., MD; IONESCU, Genoveva, MD; IONIȚA, C., MD; MARINESCU,  
N., MD; MOLDOVAN, T., MD; PAUNESCU, C., Lecturer; SEROPIAN, E., MD;  
STIGLET, C., MD; SUCIU, D., MD; VASILESCU, G., MD.

Medical Clinic of the "Carol Davila" Hospital" (Clinica medicala  
a Spitalului "Carol Davila") - (for all)

Bucharest, Viata Medicala, No 3, 1 Feb 64, pp 167-181

"Data Concerning Dispensary Supervision and Treatment of Epidemic  
Hepatitis in a Section of the town of Bucharest."

(14)

ARESTENKO, A. P.

5

USSR

Oxidation of furfural to succinic acid. A. P. Salehinskiy,  
L. B. Lapkova, and A. P. Arestenko. *J. Org. Chem.*  
U.S.S.R. 28, 107-9 (1985) (Engl. translation). See C.A.  
49, 7645d.  
H. L. H.

CH  
2

A

ARESTENKO, A. P.

AID P - 2270

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 15/19

Authors : Salchinkin, A. P., L. B. Lapkova and A. P. Arestenko

Title : Oxidation of furfural to succinic acid

Periodical: Zhur. prikl. khim., 28, no.2, 216-219, 1955

Abstract : Oxidation of furfural in vapor phase resulted in the formation of tarry products. Oxidation of furfural in liquid phase (with a 30% solution of hydrogen peroxide) resulted in the formation of succinic acid. Six refs. (3 Russian: 1932-1951).

Institution: Chair of Organic, Physical, and Colloid Chemistry of the Kuban Institute of Agriculture

Submitted : J1 14, 1953

ARESTENKO, A. F.

Study of binary systems of benzidine with phenols and naphthols by a thermal analytical method. A. G. Bergman and A. P. Astasenko (State Univ., Rostov-on-Don, 200000, USSR). *Khims.* 27, 687-70 (1957).—The benzidine and PhOH system has eutectics at 40° and 0.15% benzidine and 113.5° and 77.5% benzidine, with a dissociable complex,  $C_6H_5NH_2 \cdot 2m\text{-}C_6H_4OH$ . Benzidine-catechol has eutectics at 125.5° and 77% benzidine and 161° and 5% benzidine. A stable complex exists at 1:1 molar ratio. Benzidine-resorcinol system has eutectics at 110° and 89.7% benzidine, and 195° and 5% benzidine; an unstable equimolar complex exists, as does a complex  $(C_6H_5NH_2 \cdot 2m\text{-}C_6H_4OH)_2$ . The system benzidine-1,3,5-tri-OH has eutectics at 55.5° and 63% benzidine, and at 135.5° benzidine and a stable equimolar complex.

1-4E2d  
1-4E2x  
1-4E2c (7)  
2-MAY





5(3)

AUTHORS:

Arestenko, A. P., Bergman, A. G.

SOV/79-29-5-71/75

TITLE:

Investigation of the Reaction of Benzidine With Organic Acids  
(Issledovaniye vzaimodeystviya benzidina s organicheskimi  
kislotalami)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 5, pp 1744-1749  
(USSR)

ABSTRACT:

The present paper deals with the investigation of the melting  
point curves of the following two-component systems:

a) benzidine and b) acetic acid, propionic acid, n-butyric  
acid, iso-butyric acid, iso-valerianic acid (Fig 1), benzoic  
acid or salicylic acid (Fig 2). The following dissociating  
compounds were probably prepared:  $(C_6H_4)_2(NH_2)_2 \cdot CH_3COOH$ ;  
 $(C_6H_4)_2(NH_2)_2 \cdot CH_3CH_2COOH$ ;  $(C_6H_4)_2(NH_2)_2 \cdot CH_3(CH_2)_2COOH$ ;  
 $(C_6H_4)_2(NH_2)_2 \cdot (CH_3)_2CHCOOH$ ;  $(C_6H_4)_2(NH_2)_2 \cdot (CH_3)_2CHCH_2COOH$ ;  
 $(C_6H_4)_2(NH_2)_2 \cdot CH_3(CH_2)_6COOH$ ;  $(C_6H_4)_2(NH_2)_2 \cdot C_6H_5COOH$ ;  
 $(C_6H_4)_2(NH_2)_2 \cdot 3C_6H_5COOH$ ;  $(C_6H_4)_2(NH_2)_2 \cdot 2HOC_6H_4COOH$ .

Other compounds are apparently not formed. In the system

Card 1/2

Investigation of the Reaction of Benzidine  
With Organic Acids

SOV/79-29-5-71/75

benzidine - stearic acid a decomposition occurs between 10% and 75% acid content. A complex formation does not occur in this system. There are 2 figures, 1 table and 4 Soviet references.

ASSOCIATION: Kubanskiy sel'skokhozyaystvennyy institut  
(Kuban' Agricultural Institute)

SUBMITTED: February 16, 1958

Card 2/2

SALCHINKIN, A.P.; ARESTENKO, A.P.

Oxidation of furfurole by perhydrol in acid medium to fumaric acid.  
Zhur.prikl.khim. 36 no.3:678-680 My '63. (MIRA 16:5)

1. Kafedra organicheskoy, fizicheskoy i kolloidnoy khimii  
Kubanskogo sel'skokhozyaystvennogo instituta.  
(Furaldehyde) (Hydrogen peroxide) (Fumaric acid)

SALCHINKIN, A.P.; ARESTENKO, A.P.; KARANDASHOVA, R.A.

Furan compounds as a potential source for obtaining fumaric acid.  
Zhur.prikl.khim. 37 no.1:223-225 Ja '64. (MIRA 17:2)

1. Kubanskiy sel'skokhozyaystvennyy institut.

ARESTENKO, Yu.N.; MOROZOV, V.V.; LESNITSKAYA, V.L., professor

Experimental cerebral edema. Vop. neurokhir. 20 no.6:30-35 N-D  
'56. (MLRA 10:2)

1. Iz neyrokhirurgicheskoy kliniki Krymskogo meditsinskogo instituta  
imeni I. V. Stalina.

(BRAIN DISEASES, experimental,  
edema (Rus))

ARESTOV, I.

Gathering momentum. Mest.prom.i khud.promys. 2 no.7:18 J1 '61.  
(MIRA 15:1)

1. Sekretar' partorganizatsii Smolenskoy fabрики malogabaritnoy  
mebeli.

(Smolensk--Furniture industry) (Socialist competition)

ARFSTOV, I.G., aspirant

Effect of chlorophos on the organism of swine with scabies. Veterinariia  
41 no.3:49-50 Mr '64. (MIRA 18:1)

1. Vitebskiy veterinarnyy institut.



ARESTOV, I.G., aspirant

Effect of trichlorometaphos-3 on the organism of swine infested  
with Haematopinus and Acarus. Veterinarika 41 no.3:92-94 F '65.  
(MIRA 18:3)

1. Vitebskiy veterinarnyy institut.

ARESTOV, I.G., aspirant; PETROVA, Ye.V., prof., nauchnyy rukovoditel' raboty

Effect of chlorophos on the organism of swine. Veterinariia 41  
no.3:57-58 Mr '65. (MIRA 18:4)

1. Vitebskiy veterinarnyy institut.

ARESTOV, V.T., inzh.

Centralized freight pick-up and delivery operations. Zhel.  
dor.transp. 42 no.4:77 Ap. '60. (MIRA 13:7)

1. Nachal'nik stantsii Kirovo-Ukrainskaya Odesskoy dorogi.  
(Railroads--Freight)

ARESTOVA, D.

Determining time norms for the passing of boats. Rech.transp.19  
no.8:35-37 Ag '60. (MIRA 14:3)

1. Starshiy dispetcher dvizheniya Upravleniya kanala imeni Moskvyy.  
(Locks(Hydraulic engineering))

L 19795-65 EMT(m) Pc-4 RM

ACCESSION NR: AT5001010

S/2850/64/011/000/0098/0103

AUTHOR: Savenko, O. D.; Shostak, F. T.; Arestova, E. I.

TITLE: Properties of Ankalit K-5 sulfocationic exchange membranes. Part 3

SOURCE: AN KazSSR. Institut khimicheskikh nauk. Trudy, v. 11, 1964. Sintez i issledovaniye vysokomolekulyarnykh soyedineniy (Synthesis and research of high-molecular compounds), 98-103

TOPIC TAGS: ion exchange membrane, sulfonated polymer, membrane mechanical property, membrane electrochemical property, polyvinyl chloride film, water demineralization

ABSTRACT: Cation exchange membranes with good electrochemical and mechanical properties and high selectivity are produced by impregnating polyvinyl chloride film with a mixture of styrene, divinylbenzene, and benzoyl peroxide, and by polymerization in the presence of oxygen and subsequent sulfonation. Formation of a tightly interlaced structure and the grafting of polystyrene is facilitated by a proposed reaction mechanism, involving terminal vinyl chloride groups and double bonds formed by the splitting off of hydrochloric acid from branched groups in the polyvinyl chloride matrix. The electrical resistivity of the membranes in 0.5 N NaCl was 34-70 ohm/cm; selectivity, determined as membrane potential in

Card 1/2

L 19795-65

ACCESSION NR: AT5001010

0.1-0.5 N NaCl, was 0.96-0.97; static exchange capacity, measured by a newly developed conductometric titration method, was 1.5-2.5 meq/g for sodium ions in 0.5 N NaOH solution; bending strength was 100 folds at 180C; water permeability was very low; and the swelling factor was 1.12. The low elasticity of the membranes may be improved by plasticizers. Ankalit K-5 membranes, which are designed for electrodialytic water demineralization, are shown to have better properties than the Mk-100 commercial Soviet membranes. Orig. art. has: 1 table and 7 chemical formulas.

ASSOCIATION: Institut khimicheskikh nauk, Akademiya nauk Kazakhskoy SSR (Institute of Chemical Sciences, Academy of Sciences of the Kazakh SSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 005

OTHER: 013

Card 2/2

KHARKHAROV, A.A.; ARESTOVA, G.A.

Thermodynamic analysis of the process of azo amine dye taking-out  
by polyacrylonitrile fibers. Izv. vys. ucheb. zav.; tekhn. tekst.  
prom. no.1:92-97 '65. (MIRA 18:5)

1. Leningradskiy institut tekstil'noy i legkoy promyshlennosti  
imeni Kirova.

KHARKHAROV, A.A.; ARESTOVA, G.A.

Dyeing synthetic fibers. Report No.3. Izv.vys.ucheb.zav.; tekhn.  
tekst.prom. no.1:137-140 '59. (MIRA 12'6)

1. Leningradskiy tekstil'nyy institut im. S.M. Kirova.  
(Dyes and dyeing--Nylon)  
(Textile fibers, Synthetic--Testing)



ARESTOVA, G.A., aspirant; KHARKHAROV, A.A., prof.

Dyeing of polyacrylonitrile fibers with azo dyes forming on the  
fiber. Tekst.prom. 25 no.2:63-65 F '65. (MIRA 18:4)

1. Sotrudniki Leningradskogo instituta tekstil'noy i legkoy  
promyshlennosti.

BASOVA, R.V.; AREST-YAKUBOVICH, A.A.; SOLOVYKH, D.A.; DESYATOVA, N.V.;  
GANTMAKHER, A.R.; MEDVEDEV, S.S., akademik

Polymerization of butadiene in the presence of alkali metals  
and their compounds in various media. Dokl. AN SSSR 149 no.5:1067-1  
1070 Ap '63. (MIRA 16:5)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova,  
(Butadiene polymers) (Alkali metals)

ABDYLDAYEV, K.A.; ARESTOVA, S.I.; MAKOVA, S.K.; ZHARKIMBAYEVA, A.Zh.

Morphogenesis of experimental hypertension under high-mountain conditions. Trudy KirgNOAGE no.2:60-62 '65.

(MIRA 18:11)

1. Iz laboratorii patomorfologii (rukovoditel' - kand.med.nauk K.A.Abdyldayev) i patofiziologii (rukovoditel' - starshiy nauchnyy sotrudnik M.A.Aliyev) Kirgizskogo instituta kray-voy meditsiny AMN SSSR. Nauchnyy konsul'tant - zasluzhennyy deyatel' nauki, prof. B.F.Malyshhev.

ARETINSKIY, B.V. (Sverdlovsk)

Effect of hyperoxia on blood regeneration in experimental anemias  
[with summary in English]. Pat.fiziol. i eksp.terap. 2 no.6:38-43  
N-D '58. (MIRA 12-1)

1. Iz kafedry patologicheskoy fiziologii (zav. - prof. Ya.G. Uzhanskiy) Sverdlovskogo meditsinskogo instituta.

(ANEMIA, exper.

eff. of hyperoxia on blood regen. in rabbits (Rus))

(OXYGEN, eff.

hyperoxia, on blood regen. in anemia in rabbits  
(Rus))

ACC NR: AT6023553

(N)

SOURCE CODE: UR/3095/66/036/000/0015/0025

AUTHOR: Kolesnikov, A. G.; Panteleyev, N. A.; Aretinskiy, G. Yu.; Dykman, V. Z.

ORG: None

TITLE: Apparatus for measuring the turbulent pulsations of current speed and temperature at great ocean depths

SOURCE: AN UkrSSR. Morskoy gidrofizicheskii institut. Trudy, v. 36, 1966. Metody i pribory dlya issledovaniya fizicheskikh protsessov v okeane (Methods and instruments for studying physical processes in the ocean), 15-25

TOPIC TAGS: ~~oceanographic equipment, oceanographic expedition, oceanographic instrument, oceanographic ship, oceanography~~, ocean current, temperature detector, temperature measurement, electronic equipment, transistorized circuit, *TURBIDIMETER, OCEAN PROPERTY / GAT-3 TURBIDIMETER*

ABSTRACT: The third model of a deepwater automatic turbulence meter (GAT-3), a transistorized version of the earlier GAT-2, developed in 1964, is described. Work on these meters began in 1956 in the Maritime Hydrophysical Institute of the Academy of Sciences of the Ukrainian SSR under the leadership of Member-Correspondent A. G. Kolesnikov. The GAT-3 permits simultaneous recording on seven channels, of the vertical and horizontal components of speed pulsation, average speed, three components of the instrument's self-acceleration, and time. Temperature pulsations are also registered by a preheated sensitive element. The meter is encased in a steel

Card 1/2

ACC NR: AT6023553

container, designed for a maximum depth of 12 kilometers and was first used in the Atlantic Ocean in 1962, during the twelfth cruise of the scientific research ship Mikhail Lomonosov. A block diagram of the major measurement channels in the meter is included and described in brief. A more detailed wiring diagram and description of the major components, including the oscillator, measuring bridge, imbalance amplifier, phase discriminator and automatic balancing block is included. The calibration scale, recording device, automatic control system, and their mountings are described in brief. The shortcomings of this meter and an indication of the direction in which new work on improved measuring devices and methods is headed, with special importance attached to maximum diminution of size and weight of both meter and container for use directly on the ocean floor, concludes the article. Orig. art. has: 5 figures.

SUB CODE: 08,20/SUBM DATE: None/ORIG REF: 002

Card 2/2

ARETINSKIY, V.A., inshener.

Let's prevent rusting of bridges. Put' i put. khoz. no.1:37 Ja '57.  
(Railroad bridges--Corrosion) (MLRA 10:4)

ARETINSKIY, V.A., inzhener.

Upkeep of culverts not having a substructure. Put' i put. khoz. no.7:  
36-37 JI '57. (MLRA 10:8)

(Culverts)



ARWINSKIY, V.A., inzh.

Blasting ice floes. Put' i put. khoz. no.2:31 P '58. (MIRA 11:3)  
(Ice on rivers, lakes, etc.) (Blasting)

ARETINSKIY, V.A.; MERINOV, I.I.; ORLOV, S.P., inzh., retsenzent  
[deceased]; SHUL'GIN, Ya.A., inzh., retsenzent; SAVIN,  
K.D., inzh., retsenzent; ZELEVICH, P.M., inzh., red.; BOBROVA, Ye.N.,  
tekhn.red.  
[Manual for bridge and tunnel foremen] Spravochnik mosto-  
vogo i tonnel'nogo mastera. Moskva, Transzheldorizdat.  
1963. 519 p. (MIRA 17:2)

ARETOV, G.N.

SUBJECT USSR / PHYSICS  
 AUTHOR KOMEL'KOV, V.S., ARETOV, G.N.  
 TITLE The Production of High Pulslike Amperages.  
 PERIODICAL Dokl.Akad.Nauk 110, fasc.4, 559 - 561 (1956)  
 Issued: 12 / 1956

CARD 1 / 2

PA - 1638

The highest hitherto known amperages attained by battery discharges amount to 500 - 470 ka, and the greatest transconductance amounted to  $(0,9 - 2,5) \cdot 10^{11}$  amp/sec. On the occasion of a discharge over a load with small  $L_n$  and  $R_b$  (self-induction and resistance) the two values mentioned can be exceeded considerably if the inductivity of all elements of the device (i.e.  $L_k$  of the condensers,  $L_s$  of the rails (?) and  $L_d$  of the discharger) is considerably diminished. For the total inductivity of the circuit consisting of n condensers it holds that  $L_o = L_s + L_d + L_b + L_k/n$ . For the attainment of extreme amperages ( $L_b \rightarrow 0$ ) all other terms of this sum are of importance. For the reduction of  $L_s$  and  $L_d$  new types of rails (?) and dischargers are necessary. The most simple way of diminishing  $L_s$  is by means of compact and plane rails and by keeping the distance between the rails as small as possible. For this purpose solid insulators are necessary in addition to those on the periphery of the circuit. In the case of the circuit described here rubber- and viniplast insulators were used for an operating voltage of 50kV. If the best dielectrics are used (fluorplast, lausan) it will be sufficient for insulators to have a thickness of ~1 mm. In that case  $L_s$

ARETOV, G.N.; VASILYEV, V.I.; KOMELKOV, V.S.; PERGAMENT, M.I.  
TSEREVITNOV, S.S.

"Compression of plasma by a rapidly increasing, opposing magnetic field."

Report presented at the Conference on Plasma Physics and Controlled Nuclear  
fusion Research (IAEA)  
Salzburg, Austria 4-9 Sep 1961

All are members of the Inst. of Atomic Energy, AS USSR